Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A light-emitting device, comprising:

a multi-layer stack of materials including a layer of n-doped material, a layer of p-doped material, and a light-generating region; and

a layer of reflective material that is capable of reflecting at least about 50% of light generated by the light-generating region that impinges on the layer of reflective material,

wherein:

a surface of the layer of n-doped material is configured so that light generated by the light-generating region can emerge from the light-emitting device via the surface of the layer of n-doped material;

the surface of the layer of n-doped material has a dielectric function that varies spatially according to a pattern; ~~and~~

a distance between the layer of p-doped material and the layer of reflective material is less than a distance between the layer of n-doped material and the layer of reflective material; and

the pattern does not extend into the light-generating region.

2. (Original) The light-emitting device of claim 1, wherein the multi-layer stack of materials comprises a multi-layer stack of semiconductor materials.

3. (Original) The light-emitting device of claim 1, wherein the n-doped material comprises an n-doped semiconductor material and the p-doped material comprises a p-doped semiconductor material.

4. (Original) The light-emitting device of claim 1, wherein the light-generating region is between the layer of n-doped material and the layer of p-doped semiconductor material.

5. (Original) The light-emitting device of claim 1, further comprising a support that supports the multi-layer stack of materials.

6. (Original) The light-emitting device of claim 1, further comprising a p-ohmic contact layer between the layer of p-doped material and the layer of reflective material.

7. (Original) The light-emitting device of claim 1, further including a current-spreading layer between the layer of n-doped material and the light-generating region.

8. (Original) The light-emitting device of claim 1, wherein the multi-layer stack of materials comprise semiconductor materials.

9. (Original) The light-emitting device of claim 8, wherein the semiconductor materials are selected from the group consisting of III-V semiconductor materials, organic semiconductor materials and silicon.

10. (Canceled).

11. (Original) The light-emitting device of claim 1, wherein the pattern does not extend beyond the layer of n-doped material.

12. (Original) The light-emitting device of claim 1, wherein the pattern extends beyond the layer of n-doped material.

13. (Original) The light-emitting device of claim 1, further comprising electrical contacts configured to inject current into the light-emitting device.

14. (Original) The light-emitting device of claim 13, wherein the electrical contacts are configured to vertically inject electrical current into the light-emitting device.

15. (Original) The light-emitting device of claim 1, wherein the pattern is partially formed of a component selected from the group consisting of holes in the surface of the layer of n-doped material, pillars in the layer of n-doped material, continuous veins in the layer of n-doped material, discontinuous veins in the layer of n-doped material and combinations thereof.

16. (Original) The light-emitting device of claim 1, wherein the pattern of variation is selected from the group consisting of nonperiodic patterns, complex periodic patterns, and patterns having an ideal lattice constant and a detuning parameter greater than zero.

17. (Currently Amended) The light-emitting device of claim 1, wherein the pattern is partially formed of holes in the ~~first~~ layer of n-doped material.

18. (Original) The light-emitting device of claim 1, wherein the pattern is configured so that light emitted by the surface of the layer of n-doped material has a spectrum of radiation modes, and the spectrum of radiation modes is substantially the same as a characteristic emission spectrum of the light-generating region.

19. (Original) The light-emitting device of claim 1, wherein the light-emitting device is selected from the group consisting of light-emitting diodes, lasers, optical amplifiers, and combinations thereof.

20. (Original) The light-emitting device of claim 1, wherein the light-emitting device comprises a light emitting diode.

21. (Original) The light-emitting device of claim 1, wherein the light-emitting device is selected from the group consisting of OLEDs, flat surface-emitting LEDs, HBLEDs, and combinations thereof.

22. (Currently Amended) A light-emitting device, comprising:

a multi-layer stack of materials including a light-generating region and a first layer supported by the light-generating region, a surface of the first layer being configured so that light generated by the light-generating region can emerge from the light-emitting device via the surface of the first layer, and the surface of the first layer has a dielectric function that varies spatially according to a pattern; and

a layer of reflective material that is capable of reflecting at least about 50% of light generated by the light-generating region that impinges on the layer of reflective material,

wherein the light-generating region is between the layer of reflective material and the first layer, ~~and~~ the pattern does not extend beyond the first layer in the direction of the light generating region, and the pattern does not extend into the light-generating region.

23. (Original) The light-emitting device of claim 22, wherein the multi-layer stack of materials comprises a multi-layer stack of semiconductor materials.

24. (Original) The light-emitting device of claim 23, wherein the first layer comprises a layer of n-doped semiconductor material, and the multi-layer stack further comprises a layer of p-doped semiconductor material.

25. (Original) The light-emitting device of claim 24, wherein the light-generating region is between the layer of n-doped semiconductor material and the layer of p-doped semiconductor material.

26. (Original) The light-emitting device of claim 25, further comprising a support that supports the multi-layer stack of materials.

27. (Original) The light-emitting device of claim 26, wherein a distance between the layer of p-doped semiconductor material and the layer of reflective material is less than a distance between the layer of n-doped semiconductor material and the layer of reflective material.

28. (Original) The light-emitting device of claim 27, further comprising a p-ohmic contact layer between the layer of p-doped material and the layer of reflective material.

29. (Original) The light-emitting device of claim 22, further including a current-spreading layer between the first layer and the light-generating region.

30. (Original) The light-emitting device of claim 22, wherein the multi-layer stack of materials comprise semiconductor materials.

31. (Original) The light-emitting device of claim 30, wherein the semiconductor materials are selected from the group consisting of III-V semiconductor materials, organic semiconductor materials and silicon.

32. (Canceled).

33. (Original) The light-emitting device of claim 22, further comprising electrical contacts configured to inject current into the light-emitting device.

34. (Original) The light-emitting device of claim 33, wherein the electrical contacts are configured to vertically inject electrical current into the light-emitting device.

35. (Original) The light-emitting device of claim 22, wherein the pattern is partially formed of a component selected from the group consisting of holes in the surface of the first layer, pillars in the first layer, continuous veins in the first layer, discontinuous veins in the first layer and combinations thereof.

36. (Original) The light-emitting device of claim 22, wherein the pattern comprises at least one pattern selected from the group consisting of nonperiodic patterns, complex periodic patterns and patterns having an ideal lattice constant and a detuning parameter greater than zero.

37. (Original) The light-emitting device of claim 22, wherein the pattern is partially formed of holes in the first layer.

38. (Original) The light-emitting device of claim 22, wherein the pattern has a detuning parameter is at most about 25% of an ideal lattice constant of the pattern.

39. (Original) The light-emitting device of claim 22, wherein the pattern has a detuning parameter is at least about 1% of an ideal lattice constant of the pattern.

40. (Original) The light-emitting device of claim 22, wherein the pattern of variation in dielectric function corresponds to an ideal pattern that is substantially randomly detuned.

41. (Original) The light-emitting device of claim 22, wherein the pattern is a nonperiodic pattern.

42. (Original) The light-emitting device of claim 22, wherein the pattern is configured so that light emitted by the surface of the first layer has a spectrum of radiation modes, and the spectrum of radiation modes is substantially the same as a characteristic emission spectrum of the light-generating region.

43. (Original) The light-emitting device of claim 22, wherein the light-emitting device is selected from the group consisting of light-emitting diodes, lasers, optical amplifiers, and combinations thereof.

44. (Original) The light-emitting device of claim 22, wherein the light-emitting device comprises a light emitting diode.

45. (Original) The light-emitting device of claim 22, wherein the light-emitting device is selected from the group consisting of OLEDs, flat surface-emitting LEDs, HBLEDs, and combinations thereof.

46. (Previously Presented) The light-emitting device of claim 1, wherein the surface of the layer of n-doped material has features with a size of less than about $\lambda/5$, where λ is a wavelength of light that can be generated by the light-generating region and that can emerge from the light-emitting device via the surface of the layer of n-doped material.

47. (Previously Presented) The light-emitting device of claim 22, wherein the surface of the first layer has features with a size of less than about $\lambda/5$, where λ is a wavelength of light that can be generated by the light-generating region and that can emerge from the light-emitting device via the surface of the first layer.

48. (New) A light-emitting device, comprising:

a multi-layer stack of materials including a layer of n-doped material, a layer of p-doped material, and a light-generating region; and

a layer of reflective material that is capable of reflecting at least about 50% of light generated by the light-generating region that impinges on the layer of reflective material,

wherein:

a surface of the layer of n-doped material is configured so that light generated by the light-generating region can emerge from the light-emitting device via the surface of the layer of n-doped material;

the surface of the layer of n-doped material has a dielectric function that varies spatially according to a pattern;

a distance between the layer of p-doped material and the layer of reflective material is less than a distance between the layer of n-doped material and the layer of reflective material; and

the pattern of variation is selected from the group consisting of nonperiodic patterns, complex periodic patterns, and patterns having an ideal lattice constant and a detuning parameter greater than zero.

49. (New) The light-emitting device of claim 48, wherein the multi-layer stack of materials comprises a multi-layer stack of semiconductor materials.

50. (New) The light-emitting device of claim 48, wherein the n-doped material comprises an n-doped semiconductor material and the p-doped material comprises a p-doped semiconductor material.

51. (New) The light-emitting device of claim 48, wherein the light-generating region is between the layer of n-doped material and the layer of p-doped semiconductor material.

52. (New) The light-emitting device of claim 48, further comprising a support that supports the multi-layer stack of materials.

53. (New) The light-emitting device of claim 48, further comprising a p-ohmic contact layer between the layer of p-doped material and the layer of reflective material.

54. (New) The light-emitting device of claim 48, further including a current-spreading layer between the layer of n-doped material and the light-generating region.

55. (New) The light-emitting device of claim 48, wherein the multi-layer stack of materials comprise semiconductor materials.

56. (New) The light-emitting device of claim 48, wherein the semiconductor materials are selected from the group consisting of III-V semiconductor materials, organic semiconductor materials and silicon.

57. (New) The light-emitting device of claim 48, wherein the pattern does not extend beyond the layer of n-doped material.

58. (New) The light-emitting device of claim 48, wherein the pattern extends beyond the layer of n-doped material.

59. (New) The light-emitting device of claim 48, further comprising electrical contacts configured to inject current into the light-emitting device.

60. (New) The light-emitting device of claim 59, wherein the electrical contacts are configured to vertically inject electrical current into the light-emitting device.

61. (New) The light-emitting device of claim 48, wherein the pattern is partially formed of a component selected from the group consisting of holes in the surface of the layer of n-doped material, pillars in the layer of n-doped material, continuous veins in the layer of n-doped material, discontinuous veins in the layer of n-doped material and combinations thereof.

62. (New) The light-emitting device of claim 48, wherein the pattern of variation is selected from the group consisting of nonperiodic patterns, complex periodic patterns, and patterns having an ideal lattice constant and a detuning parameter greater than zero.

63. (New) The light-emitting device of claim 48, wherein the pattern is partially formed of holes in the first layer of n-doped material.

64. (New) The light-emitting device of claim 48, wherein the pattern is configured so that light emitted by the surface of the layer of n-doped material has a spectrum of radiation modes, and the spectrum of radiation modes is substantially the same as a characteristic emission spectrum of the light-generating region.

65. (New) The light-emitting device of claim 48, wherein the light-emitting device is selected from the group consisting of light-emitting diodes, lasers, optical amplifiers, and combinations thereof.

66. (New) The light-emitting device of claim 48, wherein the light-emitting device comprises a light emitting diode.

67. (New) The light-emitting device of claim 48, wherein the light-emitting device is selected from the group consisting of OLEDs, flat surface-emitting LEDs, HBLEDs, and combinations thereof.

68. (New) The light-emitting device of claim 48, wherein the surface of the layer of n-doped material has features with a size of less than about $\lambda/5$, where λ is a wavelength of light that can be generated by the light-generating region and that can emerge from the light-emitting device via the surface of the layer of n-doped material.

69. (New) A light-emitting device, comprising:

a multi-layer stack of materials including a light-generating region and a first layer supported by the light-generating region, a surface of the first layer being configured so that light generated by the light-generating region can emerge from the light-emitting device via the surface of the first layer, and the surface of the first layer has a dielectric function that varies spatially according to a pattern; and

a layer of reflective material that is capable of reflecting at least about 50% of light generated by the light-generating region that impinges on the layer of reflective material,

wherein:

the light-generating region is between the layer of reflective material and the first layer;

the pattern does not extend beyond the first layer; and

the pattern comprises at least one pattern selected from the group consisting of nonperiodic patterns, complex periodic patterns and patterns having an ideal lattice constant and a detuning parameter greater than zero.

70. (New) The light-emitting device of claim 69, wherein the multi-layer stack of materials comprises a multi-layer stack of semiconductor materials.

71. (New) The light-emitting device of claim 70, wherein the first layer comprises a layer of n-doped semiconductor material, and the multi-layer stack further comprises a layer of p-doped semiconductor material.

72. (New) The light-emitting device of claim 71, wherein the light-generating region is between the layer of n-doped semiconductor material and the layer of p-doped semiconductor material.

73. (New) The light-emitting device of claim 72, further comprising a support that supports the multi-layer stack of materials.

74. (New) The light-emitting device of claim 73, wherein a distance between the layer of p-doped semiconductor material and the layer of reflective material is less than a distance between the layer of n-doped semiconductor material and the layer of reflective material.

75. (New) The light-emitting device of claim 74, further comprising a p-ohmic contact layer between the layer of p-doped material and the layer of reflective material.

76. (New) The light-emitting device of claim 69, further including a current-spreading layer between the first layer and the light-generating region.

77. (New) The light-emitting device of claim 69, wherein the multi-layer stack of materials comprise semiconductor materials.

78. (New) The light-emitting device of claim 77, wherein the semiconductor materials are selected from the group consisting of III-V semiconductor materials, organic semiconductor materials and silicon.

79. (New) The light-emitting device of claim 69, further comprising electrical contacts configured to inject current into the light-emitting device.

80. (New) The light-emitting device of claim 79, wherein the electrical contacts are configured to vertically inject electrical current into the light-emitting device.

81. (New) The light-emitting device of claim 69, wherein the pattern is partially formed of a component selected from the group consisting of holes in the surface of the first layer, pillars in the first layer, continuous veins in the first layer, discontinuous veins in the first layer and combinations thereof.

82. (New) The light-emitting device of claim 69, wherein the pattern comprises at least one pattern selected from the group consisting of nonperiodic patterns, complex periodic patterns and patterns having an ideal lattice constant and a detuning parameter greater than zero.

83. (New) The light-emitting device of claim 69, wherein the pattern is partially formed of holes in the first layer.

84. (New) The light-emitting device of claim 69, wherein the pattern has a detuning parameter is at most about 25% of an ideal lattice constant of the pattern.

85. (New) The light-emitting device of claim 69, wherein the pattern has a detuning parameter is at least about 1% of an ideal lattice constant of the pattern.

86. (New) The light-emitting device of claim 69, wherein the pattern of variation in dielectric function corresponds to an ideal pattern that is substantially randomly detuned.

87. (New) The light-emitting device of claim 69, wherein the pattern is a nonperiodic pattern.

88. (New) The light-emitting device of claim 69, wherein the pattern is configured so that light emitted by the surface of the first layer has a spectrum of radiation modes, and the spectrum of radiation modes is substantially the same as a characteristic emission spectrum of the light-generating region.

89. (New) The light-emitting device of claim 69, wherein the light-emitting device is selected from the group consisting of light-emitting diodes, lasers, optical amplifiers, and combinations thereof.

90. (New) The light-emitting device of claim 69, wherein the light-emitting device comprises a light emitting diode.

91. (New) The light-emitting device of claim 69, wherein the light-emitting device is selected from the group consisting of OLEDs, flat surface-emitting LEDs, HBLEDs, and combinations thereof.

92. (New) The light-emitting device of claim 69, wherein the surface of the first layer has features with a size of less than about $\lambda/5$, where λ is a wavelength of light that can be generated by the light-generating region and that can emerge from the light-emitting device via the surface of the first layer.